8. No after-deformity.
9. Least possible danger of spreading infection to the pleural cavities or to the peritoneum.

The advantages and the relative simplicity of the operation are such that the opening of the pericardium should become more frequent. In the height of our present knowledge it seems conservative to treat all cases of purulent pericarditis and large serous effusions, and those cases of fibrinous pericarditis not reacting to rest and the ice-bag by drainage. Cases should be operated upon earlier in the disease before myocarditis has developed from absorption of toxins.

I have performed this operation on eighteen autopsy subjects. Once on a dog, in which I infected the pericardium, manipulated the heart roughly, and simply left drainage to see what would result. Estimated hemorrhage was 5 c.c. The dog was quite sick for five days, then rapidly improved. In two weeks only a healing wound remained. I have made some recent observations on the position of the heart in effusion and the relations of the pericardium to the thorax while under tension, which will be reported later.

THE PERMEABILITY TO BACTERIA OF SURGEONS' RUBBER GLOVES.

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Following a discussion among surgeons as to the absolute impermeability to bacteria of the rubber gloves so generally used in modern surgery, the writers determined to undertake a series of experiments which should determine conclusively whether or not the rubber glove was an absolute safeguard against the implantation of bacteria from the hand of the surgeon to the field of operation.

The fact that pure rubber tissue is impassable to bacteria was not questioned, the doubt hinging rather upon the process of manufacture of the gloves, it being obvious that fissures, minute perforations, or areas of extreme thinness might not infrequently occur, and would of necessity be a prolific source of wound contamination.

Six pairs of gloves of standard make were selected at random from a lot purchased for hospital use, and were subjected to the following experiments:

No. I. The fingers of the gloves were cut-off at the web and placed in test-tubes previously filled with peptone broth, high enough for the finger to be immersed about one inch when also filled with bouillon. The free cut edge of the glove finger was tied about the rim of the test-tube, the mouth plugged with raw cotton within the rubber finger, and sterilized in this arrangement for three successive days in the Arnold steam sterilizer. Upon the expiration of the proper sterilization the tubes were separated into two sets of three tubes and one control each. After carefully removing the cotton stopper two tubes were inoculated with the B. coli communis, two with staphylococcus pyogenes albus, and two with streptococcus pyogenes, the control placed under the same conditions, but not inoculated.

After twenty-four hours' growth at 37° C., one tube of each culture was plated by the stroke method from the bouillon without the glove finger. Extreme care was taken in removing the finger that no culture within the rubber should escape. The bouillon in the tubes that had been in contact with the glove finger containing the B. coli communis and staphylococcus pyogenes albus gave a positive culture of the corresponding organism, but not any culture appeared on the tube containing streptococcus pyogenes. There was a possible source of contamination in the two tubes which gave cultures, for, when taken from the incubator, the rubber that had been inverted over the rim of the test-tubes was found loose; it was moist when tied, and dry when it came from the incubator. The same conditions prevailed in those cultures allowed forty-eight hours' growth—*i. e.*, the streptococcus pyogenes negative, staphylococcus and B. coli communis positive. The controls consistently were sterile. If the growth was due to contamination or faulty technique, the reasons for the streptococcus pyogenes' failure to grow were probably incorrect temperature for this particular strain of organism, or unfavorable reaction of the medium. The growth of the second twenty-four hours was at room temperature.

As this was obviously a delicate and difficult method, it was dropped. When the next experiment was done there was no satisfactory strain of streptococcus pyogenes in the laboratory, so the work was continued with the other two organisms.

No. II. This time whole gloves were used, immersed in large flasks of bouillon. The gloves were placed in bouillon about halfway to the wrist, and bouillon poured into three to the same height. The gauntlet was reflected over the rim of the flask and tied tightly. To avoid any risk of external infection a beaker was inverted over the cotton stopper. It may be said here that it is expedient to grease the glove at the surface that comes in contact with the cotton, otherwise the rubber will pull up when the stopper is removed.

After sterilization, as before, the bouillon within the gloves was inoculated with the B. coli communis and staphylococcus pyogenes albus and allowed to grow forty-eight hours, when cultures were made from within and without the gloves; the former resulted in a pure culture of the germ, the latter being sterile. This experiment was repeated with like results.

No. III. The last test was severe. The flasks and gloves were prepared, stoppered, covered, and sterilized as before, but at the time of inoculation the wrist of each glove was twisted in order to distend the glove, making the pressure greater than when on the operator's hand; then it was tied tightly and the flasks were put at 37° C. for forty-eight hours. The cultures made from the bouillon showed no B. coli communis or staphylococcus pyogenes albus. Entirely new gloves were used each time.

The results of these experiments were such as to justify the writers in arriving at the conclusion that rubber gloves are absolute barriers against wound infection by the hands of the surgeon, in so far that they are absolutely bacteria proof. Any infection occurring must be introduced into the wound from some point not protected by a glove.

THE EFFECT OF EXPERIMENTAL CONDITIONS ON THE VASCULAR LESIONS PRODUCED BY ADRENALIN.

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and

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The pathogenesis of diseases of the bloodvessel walls has been one of the most obscure subjects in pathology, partly because we have been entirely dependent on clinical and anatomical observation for our knowledge of the process; partly because arteriosclerosis and atheroma are found associated with such varied pathological and clinical conditions that it is almost impossible to determine which of these stand in an etiological relation. The experimental production of such changes in the bloodvessel walls is therefore a noteworthy advance in our study of the subject, and the discovery by Crocq and Gilbert and Lion that the injection of bacteria and their toxins may produce such changes was of very great interest. Two years ago the subject was brought into even greater prominence by Josué's discovery that the repeated injection of small amounts of adrenalin into the veins of rabbits produced changes in the aorta which have a close resemblance to atheroma, even calcification being not infrequent. The results obtained by Josué were confirmed by the observations of Rzentkowski, Erb,